

IN THE CLAIMS:

The following is a complete listing of the claims, and replaces all earlier listings and all earlier versions.

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1. (Currently Amended) An information processing apparatus comprising:
storage for storing printing data to which a printing attribute has been added;
contour information extraction means for extracting contour information based on the printing attribute added to the printing data that are stored in said storage ;
layout reference information setting means for setting layout reference information based on the contour information extracted by said contour information extraction means, the layout reference information being used as a reference when laying out the printing data; and
layout means for laying out the printing data based on the layout reference information set by said layout reference information setting means,
wherein the layout reference information comprises a layout reference point and a layout reference size.

2. (Canceled)

5.6 C.1)

3. (Previously Presented) An information processing apparatus according to claim 1, wherein said layout means designates layout position for and size of the printing data.

4. (Previously Presented) An information processing apparatus according to claim 1, further comprising:
a display, for use in displaying the printing data, stored in said storage ,
based on the printing attributes that are added to the printing data,
wherein said contour information extraction means extracts the contour information for the printing data displayed on said display based on resolution of said display.

31 5. (Previously Presented) An information processing apparatus according to claim 1, further comprising:
a display, for use in displaying the printing data, stored in said storage , that is based on the printing attributes that are added to the printing data;
printing means for printing the printing data stored in said storage in accordance with the printing attributes added to the printing data;
enlargement means for enlarging the printing data based on a difference in the resolutions between said display and said printing means; and
reduction means for reducing the contour information,
wherein said contour information extraction means extracts the contour information for the printing data based on the enlarged printing data, and
wherein, after the contour information is extracted by said contour information extraction means, said reduction means reduces the contour information to original size.

6. and 7. (Canceled).

5.6 C.1 }
8. (Previously Presented) An information processing apparatus according to claim 1, wherein said layout reference information setting means sets the layout reference information based on the circumscribed rectangle of a visible portion of the printing data.

9. - 11. (Canceled).

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12. (Previously Presented) An information processing apparatus according to claim 1, wherein the printing data includes character/graphic data and data for a positioning mark used when printing the character/graphic data.

13. - 15. (Cancelled).

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16. (Previously Presented) An information processing apparatus according to claim 1, further comprising:
bar code data input means for entering bar code data, and
wherein said layout means lays out bar code based on the bar code data entered by said bar code data input means.

17. - 19. (Canceled).

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20. (Previously Presented) An information processing apparatus according to claim 1, further comprising:

first and second printing means that have different printing resolutions;

selection means for selecting either said first or said second printing means;

additional printing information setting means for setting, for said printing means selected by said selection means, additional printing information that is required when printing the printing data; and

print control means for permitting said printing means selected by said selection means to print the printing data in accordance with the additional printing information.

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21. and 22. (Canceled).

Sub (1)

23. (Previously Presented) An information processing apparatus according to claim 1, further comprising:

printing data input means for entering the printing data received from an external information processing apparatus together with the printing attributes that are added to the printing data.

24. (Canceled).

Sub (1)

25. (Previously Presented) An information processing apparatus according to claim 1, further comprising:

printing data output means for outputting the printing data, together with the printing attributes, to an external information processing apparatus.

26. (Canceled).

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27. (Previously Presented) An information processing apparatus according to claim 1, further comprising:

printing data selection means for selecting a plurality of printing data;

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grouping means for assembling the plurality of printing data into a single body of group data;

group data storage, for use in storing the group data obtained by said grouping means;

retrieval means for retrieving the group data from said group data storage;

modification means for modifying the group data that is retrieved by said retrieval means; and

control means for, even when the retrieved group data is modified by said modification means, inhibiting changing of the group data stored in said group data storage.

28. (Canceled).

33 C1 }
29. (Previously Presented) An information processing apparatus according to claim 1, further comprising:

printing data selection means for selecting a plurality of printing data;

grouping means for assembling the plurality of printing data into a single body of group data;

group data storage, for use in storing the group data obtained by said grouping means;

retrieval means for retrieving the group data from said group data storage ;

modification means for modifying the group data that is retrieved by said retrieval means; and

control means for changing the group data stored in said group data storage in synchronization with the modifying of the retrieved group data by said modification means.

30. (Canceled).

31. (Currently Amended) An information processing method comprising:

a contour information extraction step, of extracting contour information based on a printing attribute that has been added to printing data stored in storage;

a layout reference information setting step, of setting layout reference information based on the contour information extracted in said contour information extraction step, the layout reference information being used as a reference when laying out the printing data; and

a layout step, of laying out the printing data based on the layout reference information set in said layout reference information setting step,

wherein the layout reference information comprises a layout reference point
and a layout reference size

32. (Canceled)

33. (Previously Presented) An information processing method according to claim 31, wherein layout position for and size of the printing data are designated in said layout step.

34. (Previously Presented) An information processing method according to claim 31, further comprising:

a display control step, of displaying the printing data, stored in the storage, on a display based on the printing attributes that are added to the printing data,

wherein, in said contour information extraction step, the contour information for said printing data displayed on the display.

35. (Previously Presented) An information processing method according to claim 31, further comprising:

a display control step, of displaying the printing data, stored in the storage, on a display based on the printing attributes that are added to the printing data;

a printing control step, of printing the data stored in the storage, by using printing means in accordance with the printing attributes added to the printing data;

an enlargement step, of enlarging the printing data based on a difference in resolutions between the display and the printing means to display the enlarged printing data on the display; and

a reduction step, of reducing the contour information, wherein, in said contour information extraction step, the contour information for the printing data is extracted based on the enlarged printing data, and

wherein, after the contour information is extracted in said contour information extraction step, the contour information are reduced to original size in said reduction step.

36. and 37. (Canceled).

38. (Previously Presented) An information processing method according to claim 31, wherein, in said layout reference information setting step, the layout reference information is set based on the circumscribed rectangle of a visible portion of the printing data.

39. - 41. (Canceled).

42. (Previously Presented) An information processing method according to claim 31, wherein the printing data includes character/graphic data and data for a positioning mark used when printing the character/graphic data.

43. - 45. (Canceled).

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46. (Previously Presented) An information processing method according to claim 31, further comprising:

a bar code data input step, of entering bar code data,
wherein, in said layout step, bar code is laid out based on the code data entered in said code data input step.

47. - 49. (Canceled).

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50. (Previously Presented) An information processing method according to claim 31, further comprising:

a selection step, of selecting either first or second printing means, the first and said second printing means having different resolutions;
an additional printing information setting step of setting additional printing information, for the one of the printing means selected in said selection step, that is required when printing the printing data; and
a print control step, of permitting said printing means selected in said election step to print the printing data in accordance with the additional printing information.

51. and 52. (Canceled).

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53. (Previously Presented) An information processing method according to claim 31, further comprising:

a printing data input step, of entering the printing data received from an external information processing apparatus together with the printing attributes that are added to the printing data.

54. (Canceled).

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55. (Previously Presented) An information processing method according to claim 31, further comprising:

a printing data output step, of outputting the printing data, together with the printing attributes, to an external information processing apparatus.

56. (Canceled).

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57. (Previously Presented) An information processing method according to claim 31, further comprising:

a printing data selection step, of selecting a plurality of printing data;

a grouping step, of assembling the plurality of printing data into a single body of group data;

a group data storage control step, of storing the group data obtained in said grouping step into group data storage;

a retrieval step, of retrieving the group data from the group data storage;

a modification step, of modifying the group data that is retrieved in said retrieval step; and

a control step, of, even when the retrieved group data is modified in said modification step, inhibiting changing of the group data stored in the group data storage.

58. (Canceled).

59. (Previously Presented) An information processing method according to claim 31, further comprising:

a printing data selection step, of selecting a plurality of printing data;

a grouping step of assembling the plurality of printing data into a single group data;

a group data storage control step, of storing the group data obtained in said grouping step into group data storage;

a retrieval step, of retrieving the group data from in group data storage;

a modification step, of modifying the group data that is retrieved in said retrieval step; and

a control step, of changing group data stored in the storage in synchronization with the modifying of the retrieved group data in said modification step.

60. (Canceled).

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61. (Currently Amended) A storage medium, which is readable by a computer and on which a computer program is stored, said computer program comprising:

a contour information extraction module for extracting contour information based on a printing attribute added to printing data;

a layout reference information setting module for setting layout reference information based on the contour information extracted by said contour information extraction module, the layout reference information being used as a reference when laying out the printing data; and

a layout module for laying out the printing data based on the layout reference information set by said layout reference information setting module,

wherein the layout reference information comprises a layout reference point and a layout reference size.

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62. - 132. (Canceled).

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133. (Previously Presented) A graphic processing apparatus comprising:

storage, for use in storing graphic data to which a printing attribute has been added;

contour information extraction means for extracting contour information based on the printing attribute added to the graphic data that are stored in said storage; and

magnification means for performing a magnification process on the graphic data based on the contour information extracted by said contour information extraction means.

134. (Previously Presented) A graphic processing apparatus according to claim 133, further comprising:

magnification designation means for specifying an enlargement size or a reduction size; and

contour size calculation means for calculating a size of the contour information extracted by said contour information extraction means,

wherein said magnification means calculates a magnification rate based on the calculated size and the enlargement size or the reduction size.

135. - 139. (Canceled).

140. (Previously Presented) A graphic processing apparatus according to claim 133, wherein said contour information extraction means includes:

classification means for, in accordance with the printing attribute, sorting the graphic data into a first class, including a common pattern such as a single line segment or a circle, a second class, including a multi-line graphic pattern formed of a plurality of lines, or a third class, including a graphic pattern having an offset graphic pattern that differs from original pattern type of the graphic data; and

extraction means for extracting the contour information from the graphic data in accordance with the class provided by said classification means.

141. - 150. (Canceled).

5.6 C.1 }
151. (Currently Amended) A graphic processing method comprising:
a storage step, of storing in storage graphic data to which a printing attribute
has been added;
a contour information extraction step, of extracting contour information
based on the printing attribute added to the graphic data that are stored in ~~said~~ the storage;
and
B.1 a magnification step, of performing a magnification process for the graphic
data based on the contour information extracted in said contour information extraction step.

152. (Previously Presented) A graphic processing method according to
claim 151, further comprising:
a magnification designation step, of specifying an enlargement size or a
reduction size; and
a contour size calculation step, of calculating a size of the contour
information extracted in said contour information extraction step,
wherein, in said magnification step, a magnification rate is calculated based
on the calculated size and the enlargement size or the reduction size.

153. - 157. (Canceled).

5.6 C.1 }
158. (Previously Presented) A graphic processing method according to
claim 151, wherein said contour information extraction step includes:

a classification step, of, in accordance with the printing attribute, sorting the graphic data into a first class, including a common pattern such as a single line segment or a circle, a second class, including a multi-line graphic pattern formed of a plurality of lines, or a third class, including a graphic pattern having an offset graphic pattern that differs from original pattern type of the graphic data; and

an extraction step, of extracting the contour information in accordance with the class provided in said classification step.

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159. - 168. (Canceled).

169. (Previously Presented) A storage medium in which is stored a control program for permitting a computer to perform a graphic process, said control program comprising:

code for a storage step, of storing in storage graphic data to which a printing attribute has been added;

code for a contour information extraction step, of extracting contour information based on the printing attribute added to the graphic data that are stored in the storage; and

code for a magnification step, of performing a magnification process on the graphic data based on the contour information.

170. (Previously Presented) An information processing apparatus comprising:

storage, for use in storing printing data with added printing attributes;
contour information extraction means for extracting contour information
based on the printing attributes for the printing data that are stored in said storage;

layout reference information setting means for setting layout reference
information that is to be used as a reference for layout of the printing data based on the
contour information extracted by said contour information extraction means; and

layout means for laying out the printing data based on the layout reference
information set by said layout reference information setting means,

wherein, when the printing data is character data, said layout reference
information setting means sets the layout reference information in accordance with height
of a visible portion of a predetermined reference character and width of a visible portion of
the printing data.

171. (Previously Presented) An information processing apparatus
according to claim 170, further comprising:

first character size designation means for designating size of character data
in accordance with the height of the visible portion of the reference character that is
determined in advance for each typeface.

172. (Previously Presented) An information processing apparatus
according to claim 171, further comprising:

second character size designation means for designating size of character data in accordance with the height of a rectangular area that the reference character occupies.

173. (Canceled).

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174. (Previously Presented) An information processing apparatus according to claim 170, wherein the layout reference information is a feature point on a rectangle that is set by using the height of the visible portion of the predetermined reference character and the width of the visible portion of the printing data, and

wherein the layout position specified by said layout means is a designated point on a display screen, or an input coordinate position.

175. - 191. (Canceled).

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192. (Previously Presented) An information processing method comprising:

a contour information extraction step, of extracting contour information based on printing attributes for printing data;

a layout reference information setting step, of setting layout reference information that is to be used as a reference for layout of the printing data based on the contour information extracted in said contour information extraction step; and

a layout step, of laying out the printing data based on the layout reference information set in said layout reference information setting step,

wherein, when the printing data is character data, then in said layout reference information setting step, the layout reference information is set in accordance with height of a visible portion of a predetermined reference character and width of a visible portion of the printing data.

193. (Previously Presented) An information processing method according to claim 192, further comprising:

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a first character size designation step, of designating size of character data in accordance with the height of the visible portion of the reference character that is determined in advance for each typeface.

194. (Previously Presented) An information processing method according to claim 192, further comprising:

a second character size designation step, of designating size of character data in accordance with the height of a rectangular area that the reference character occupies.

195. (Canceled).

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196. (Previously Presented) An information processing method according to claim 192, wherein the layout reference information is a feature point on a rectangle that

is set by using the height of the visible portion of the predetermined reference character and the width of the visible portion of the printing data, and

wherein the layout position specified in said layout step is a designated point on a display screen, or an input coordinate position.

197. - 213. (Canceled).

214. (Previously Presented) A storage medium in which a computer program is stored, said computer program comprising:

a first module for extracting contour information based on printing attributes for printing data;

a second module for, when the printing data is character data, setting layout reference information that is to be used as a reference for layout of the printing data in accordance with height of a visible portion of a predetermined reference character, width of a visible portion of the printing data, and the extracted contour information; and

a third module for laying out the printing data based on the layout reference information that is obtained.